



# AFCTN Test Report 93-069

AFCTB-ID  
93-041

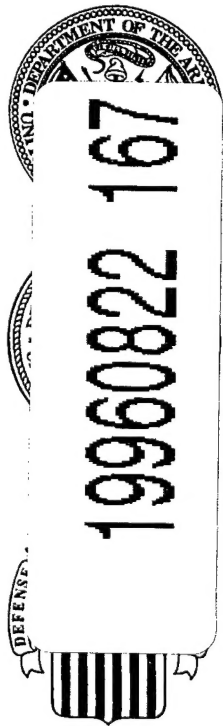


## Technical Publication Transfer

Using:



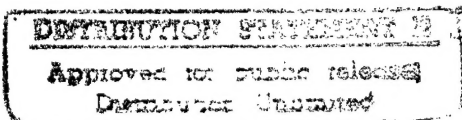
Northrop Corporation's Data



MIL-D-28000A (IGES)  
MIL-M-28001A (SGML)  
MIL-R-28002A (Raster)  
MIL-D-28003 (CGM)

Quick Short Test Report

22 April 1993



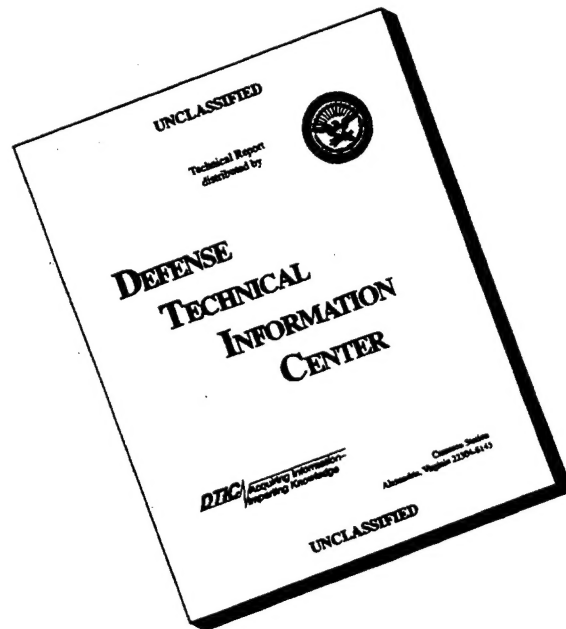
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Electronic Systems Center



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AFCTN Test Report  
93-069

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**Technical Publication Transfer  
Using:  
Northrop Corporation's Data**

**MIL-D-28000A (IGES)  
MIL-M-28001A (SGML)  
MIL-R-28002A (Raster)  
MIL-D-28003 (CGM)**

**Quick Short Test Report**

**22 April 1993**

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## 1. Introduction

### 1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-Cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

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## 1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Northrop Corporation's interpretation and use of the CALS standards in transferring technical publication data. Northrop used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.



## 2. Test Parameters

Test Plan: AFCTB 93-041

Date of  
Evaluation: 22 April 1993

Evaluator: George Elwood  
Air Force CALS Test Bed  
DET 2 HQ ESC/ENCP  
4027 Colonel Glenn Hwy  
Suite 300  
Dayton OH 45431-1672

Data  
Originator: John P. Kent  
Northrop Corporation  
B-2 Division  
L591/GK  
8900 E. Washington Blvd  
Pico Rivera CA 90660  
(310) 948-0624

Data  
Description: Technical Manual Test  
2 Document Declaration file  
2 Document Type Definitions (DTD)  
1 Initial Graphics Exchange Specification  
(IGES) file  
1 Text file  
1 Raster file  
1 Computer Graphics Metafile (CGM) file

Data  
Source System:

IGES

### HARDWARE

Unknown

### SOFTWARE

Unknown

---

TEXT/Standard Generalized Markup Language (SGML)

HARDWARE  
Unknown  
SOFTWARE  
Unknown

Raster

HARDWARE  
Unknown  
SOFTWARE  
Unknown

CGM

HARDWARE  
Unknown  
SOFTWARE  
Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280  
AFCTN Tapetool v1.2.8 UNIX  
XSoft Compugraphics CAPS/CALS v40.4  
Texas Instruments (TI) Tapetool v1.0.1  
PC 486/50  
AFCTN Tapetools v1.2.9 DOS

MIL-D-28000 (IGES)

Sun SparcStation 2  
ArborText iges2draw  
IGES Data Analysis  
(IDA) Parser/Verifier v92  
IDA IGESView v3.05  
PC 486/50  
AUTODESK AutoCAD 386 R12  
Cadkey Cadkey v5.02

MIL-M-28001 (SGML)

Cheetah Gold 486  
Datalogics ParserStation v3.36  
Exoterica XGMLNormalizer v1.2e3.2  
Exoterica Validator v2.0 EXL.

---

McAfee & McAdam Sema Mark-it v2.3

MIL-R-28002 (Raster)

SUN SparcStation 2

ArborText g42tiff

AFCTN validg4

AFCTN calstb.475

IDA IGESView v3.0

Island Graphics IslandPaint v3.0

Cheetah

Inset Systems HiJaak v2.1

Inset Systems HiJaak Window v1.0

Software Publishing Corporation

(SPC) Harvard Graphics v3.0

Corel Ventura Publisher

MIL-D-28003 (CGM)

SUN SparcStation 2

ArborText cgm2draw

Island Graphics IslandDraw v3.0

Cheetah Gold 486

Advance Technology Center

(ATC) MetaView R 1.12

ATC MetaCheck R 2.05

SPC Harvard Graphics v3.05

Inset Systems HiJaak v2.1

Inset Systems HiJaak v1.0 Windows

Micrografx Designer v3.1

Micrografx Charisma v2.1

Corel Ventura Publisher

Standards

Tested:

MIL-STD-1840A

MIL-D-28000A

MIL-M-28001A

MIL-R-28002A

MIL-D-28003

### 3. 1840A Analysis

#### 3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with the magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

#### 3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

##### 3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool* v1.2.8 utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using TI's version of *Tapetool* v1.0.1 with no reported errors.

The tape was read using XSoft's *CAPS read1840A* without a reported error.

The tape was read using the AFCTN *Tapetool* v1.2.9 (0) DOS without a reported error.

### 3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration file or data file headers.

The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

## 4. IGES Analysis

The tape was evaluated using IDA's *Parser/Verifier* sets for CALS Class I standard. No errors were reported during this procedure.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using Arbortext's *iges2draw* utility. Because of a negative value for the X-axis, the "-bound data" switch had to be set. The resulting file was read into Island Graphics' *IslandDraw*. The image displayed and printed correctly.

The file was imported into AUTODESK's AutoCAD R12 with the v5.1 IGES translator. The image displayed correctly on the screen.

The file was converted using Cadkey's *ig2c* utility with no reported errors. The file was read into Cadkey's *Cadkey* and displayed without a reported problem.

The file was converted using Rosetta Technologies' *Prepare* with an error reported on the maximum power of ten. The resulting file displayed correctly when read into *Preview*.

The file was read into IDA's *IGESView*, displayed and printed without a problem.

The IGES file meets the Cals MIL-D-28000A specification.

## 5. SGML Analysis

The tape contained two DTD and two Text files.

The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

Because of problems defined below in the first document, the DTD had an error which prevented it from being parsed.

### 5.1 Document One

The first document contained a complete DTD and capacity statement. When this DTD was parsed, using the Exoterica *XGMLNormalizer* parser, several errors were reported. Discussions with Exoterica pointed to several critical errors in the DTD. The first error was the partial statement on line 7. No starting quote marks were shown. The next errors were on line 22-24 where an unknown reference was used. When the Exoterica reference file was used the values on lines 31 and 32 had to be added. The reference to FSIDREF on line 43 is believed to be a typo. This was changed to IDREF.

```
1      <!SGML "ISO 8879-1986"
2      CHARSET
3      BASESET "ISO 646-1983//CHARSET International Reference Version
4      (IRV)//ESC 2/5 4/0"
5      DESCSET      0      9      UNUSED
6      9      2      9
7      Right Part of Latin Alphabet Nr. 3//ESC 2/13 4/3"
8      DESCSET      128      32      UNUSED
9      160      5      32
```

---

```

10          165          1  UNUSED
11          166          88  38
12          254          1  127
13          255          1  UNUSED
14  CAPACITY      SGMLREF
15  TOTALCAP      175000
16  GRPCAP        70000
17  ATTCAP        50000
18  SCOPE         DOCUMENT
19  SYNTAX
20  SHUNCHAR CONTROLS 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
21      18 19 20 21 22 23 24 25 26 27 28 29 30 31 127 255
22  BASESET "ANSI X3.4-1986//CHARSET
23      American Standard Code for
24      Information Interchange (ASCII)//ESC 2/8 4/2"
25  DESCSET      0          128          0
26  FUNCTION     RE          13
27              RS          10
28              SPACE       32

```

<<<<< PART OF FILE REMOVED HERE >>>>>

```

29  QUANTITY      SGMLREF      LITLEN      2048
30              NAMELEN        32
31              ATTCNT          80
32              GRPCNT          100

```

<<<<< PART OF FILE REMOVED HERE >>>>>

```

33  <!ELEMENT doc - - (front,body,closing) +(viewdef)>
34  <!ATTLIST doc
35      branch      CDATA #IMPLIED
36      docid       NMTOKEN #IMPLIED
37      fosicite    CDATA #REQUIRED>
38
39  <!ELEMENT      viewdef      - o      (viewport+)>
40  <!ELEMENT      viewport     - o      EMPTY  >
41  <!ATTLIST      viewport
42      name              ID              #IMPLIED
43      viewstyleid       FSIDREF #IMPLIED
44      coord             CDATA  #IMPLIED
45      vpflood           (black|white|red|orange|yellow|green|
46                          blue|violet|brown|gray)      #IMPLIED >

```

<<<<< REMOVED OF DTD REMOVED HERE >>>>>

When the above changes were made, the DTD and Text file parsed without reported errors using Exoterica's *XGML-Normalizer*, Exoterica's *Validator*, Datalogics' *ParseStation*, McAfee & McAdam's *Sema Mark-it*, and Public Domain's *sgmls*.

The DTD does not meet the CALS MIL-M-28001A specification.

## 5.2 Document Two

No errors were reported from any of the parsers on the DTD or Text files.

## 6. Raster Analysis

The tape contained one Raster file. This file was evaluated using the AFCTN *validg4* utility which reported the file as meeting the CALS MIL-R-28002A specification.

The file was read into the AFCTN *calstb.475* viewer without a problem. The image appeared to have a slight angle.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was read, displayed, and printed using Inset Systems' *HiJaak for Windows* with no reported errors.

The file was read, displayed, and printed using IDA's *IGES-View* with no reported errors.

The file was converted using ArborText's *g42tiff* utility with no reported errors. The resulting file was read into Island Graphics' *IslandPaint*, displayed and printed without a problem.

The Raster file meets the CALS MIL-R-28002A specification.

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## 7. CGM Analysis

The tape contained one CGM file. This file was evaluated using ATC's *MetaCheck* with CALS options.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was read into ATC's *MetaView*. The display showed major errors in the fonts and text. This program also reported an error during this procedure.

The file was converted without reported error using Arbor-Text's *cgm2draw* utility. The resulting file was read into Island Graphics' *IslandDraw*, displayed and printed. Some text appeared to overflow the defined area. No color was displayed.

The file was converted using Island Graphics' *IslandDraw* software without a reported error. The resulting image displayed in color. Errors were noted in the elliptical arcs, both open and closed.

The file was read into ATC's *forreview* without a reported error. Some text overflow was noted. The graphical entities appeared to be correct.

When an attempt to read the file using the Micrografx *Designer* and *Charisma*, nothing displayed. No error messages were displayed. According to Michael Harrison of Micrografx, "Micrografx is aware of the problems associated with reading these files and is working on a solution to be implemented in a future release of our products."

Inset Systems' *HiJaak for Windows* reported a C Runtime error when the file was read.

The CGM file was reported as meeting the CALS MIL-D-28003 specification.

---

## 8. Conclusions and Recommendations

The physical tape structure on the tape from Northrop Corporation was correct. There were no reported errors from any of the four different tape reading utilities.

The IGES file meets the CALS MIL-D-28000A specification.

The DTD in document one had a reference which prevented it from being parsed. The SGML part of this tape did not meet the CALS MIL-M-28001A specification.

The Raster file meets the CALS MIL-R-28002A specification.

The CGM file was reported as meeting the CALS MIL-D-28003 specification.

The tape does not meet the CALS MIL-STD-1840A requirements, because of the DTD file error in Document One.

## 9. Appendix A - Tapetool Report Logs

### 9.1 Tape Catalog

Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release Number 8

Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Thu Apr 22 10:22:05 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/tapetool8/Set093

Page: 1

| File Name | File Type            | Record<br>Format/<br>Length | Block<br>Length/Total | Selected/<br>Extracted |
|-----------|----------------------|-----------------------------|-----------------------|------------------------|
| D001      | Document Declaration | D/00260                     | 02048/000001          | Extracted              |
| D002      | Document Declaration | D/00260                     | 02048/000001          | Extracted              |
| D001T001  | Text                 | D/00260                     | 02048/000001          | Extracted              |
| D001G002  | DTD                  | D/00260                     | 02048/000003          | Extracted              |
| D001H003  | Output Specification | D/00260                     | 02048/000016          | Extracted              |
| D002T001  | Text                 | D/00260                     | 02048/000002          | Extracted              |
| D002C002  | CGM                  | F/00080                     | 00800/000006          | Extracted              |
| D002R003  | Raster               | F/00128                     | 02048/000017          | Extracted              |
| D002Q004  | IGES                 | F/00080                     | 02000/000012          | Extracted              |
| D002G005  | DTD                  | D/00260                     | 02048/000010          | Extracted              |
| D002H006  | Output Specification | D/00260                     | 02048/000061          | Extracted              |

Catalog Process terminated normally.

---

## 9.2 Tape Evaluation Log

Air Force CALS Test Network Tape Evaluation - Version 1.2; Release Number 8  
Standards referenced:

ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes  
for Information Interchange

ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Thu Apr 22 10:21:50 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ITDS01

CONTROLLER

4

Label Identifier: VOL1  
Volume Identifier: ITDS01  
Volume Accessibility:  
Owner Identifier:  
Label Standard Version: 4

HDR1D001

ITDS0100010001000100 93104 93104 000000 CONTROLLER

Label Identifier: HDR1  
File Identifier: D001  
File Set Identifier: ITDS01  
File Section Number: 0001  
File Sequence Number: 0001  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 93104  
Expiration Date: 93104  
File Accessibility:  
Block Count: 000000  
Implementation Identifier: CONTROLLER

HDR2D0204800260

00

Label Identifier: HDR2  
Recording Format: D  
Block Length: 02048  
Record Length: 00260  
Offset Length: 00



---

Implementation Identifier: CONTROLLER

HDR2D0204800260

00

Label Identifier: HDR2  
Recording Format: D  
Block Length: 02048  
Record Length: 00260  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

Actual Block Size Found = 2048 Bytes.

Number of data blocks read = 61.

\*\*\*\*\* Tape Mark \*\*\*\*\*

EOF1D002H006

ITDS0100010011000100 93104 93104 000061 CONTROLLER

Label Identifier: EOF1  
File Identifier: D002H006  
File Set Identifier: ITDS01  
File Section Number: 0001  
File Sequence Number: 0011  
Generation Number: 0001  
Generation Version Number: 00  
Creation Date: 93104  
Expiration Date: 93104  
File Accessibility:  
Block Count: 000061  
Implementation Identifier: CONTROLLER

EOF2D0204800260

00

Label Identifier: EOF2  
Recording Format: D  
Block Length: 02048  
Record Length: 00260  
Offset Length: 00

\*\*\*\*\* Tape Mark \*\*\*\*\*

\*\*\*\*\* Tape Mark \*\*\*\*\*

##### End of Volume ITDS01 #####

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##### End Of Tape File Set #####

Tape Import Process terminated with 0 error(s), 0 warning(s),  
and 0 note(s).

---

### 9.3 Tape File Set Validation Log

Air Force CALS Test Network File Set Evaluation - Version 1.2; Release Number 8  
Standards referenced:

MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Thu Apr 22 10:22:05 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set093

Found file: D001

Extracting Document Declaration Header Records...

Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/GK  
E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624

srcdocid: STPRO25.2.4

srcrelid: NONE

chglvl: ORIGINAL

dteisu: 19930414

dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT,  
TechnCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601

dstdocid: STPRO25.2.4

dstrelid: NONE

dtetrm: 19930414

dlvacc: NONE

filcnt: T1, H1, G1

ttlcls: UNCLASSIFIED

doccls: UNCLASSIFIED

doctyp: DIRECTIVE

docttl: Test of error reports

Found file: D001T001

Extracting Text Header Records...

Evaluating Text Header Records...

srcdocid: STPRO25.2.4

dstdocid: STPRO25.2.4

txtfilid: W

doccls: UNCLASSIFIED

notes: NONE

Saving Text Header File: D001T001\_HDR



Saving Text Data File: D001T001\_TXT

Found file: D001G002  
Extracting DTD Header Records...  
Evaluating DTD Header Records...

srcdocid: STPRO25.2.4  
dstdocid: STPRO25.2.4  
notes: NONE

Saving DTD Header File: D001G002\_HDR  
Saving DTD Data File: D001G002\_DTD

Found file: D001H003  
Extracting Output Specification Header Records...  
Evaluating Output Specification Header Records...

srcdocid: STPRO25.2.4  
dstdocid: STPRO25.2.4  
notes: NONE

Saving Output Specification Header File: D001H003\_HDR  
Saving Output Specification Data File: D001H003\_OS

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

No errors were encountered in Document D001.

Found file: D002  
Extracting Document Declaration Header Records...  
Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/GK  
E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624  
srcdocid: STPRO25.2.5  
srcrelid: NONE  
chglvl: ORIGINAL  
dteisu: 19930414  
dstsys: Jeff Fisher, Integration Manager, USAF CALS Test Bed, HQ AFMC (I)/ENCT,  
TechnCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601  
dstdocid: STPRO25.2.5

---

dstrelid: NONE  
dtetrm: 19930414  
dlvacc: NONE  
filcnt: T1, H1, G1, C1, Q1, R1  
ttlcls: UNCLASSIFIED  
doccls: UNCLASSIFIED  
doctyp: DIRECTIVE  
doctl: Test of local directives

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Found file: D002H006  
Extracting Output Specification Header Records...  
Evaluating Output Specification Header Records...

srcdocid: STPRO25.2.5  
dstdocid: STPRO25.2.5  
notes: NONE

Saving Output Specification Header File: D002H006\_HDR  
Saving Output Specification Data File: D002H006\_OS

Evaluating numbering scheme...  
No errors were encountered during numbering scheme evaluation.  
Numbering scheme evaluation complete.

Checking file count...  
No errors were encountered during file count verification.  
File Count verification complete.

No errors were encountered in Document D002.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

---

## 10. Appendix B - Detailed IGES Analysis

### 10.1 File D002Q004

#### 10.1.1 Parser/Verifier Log

```
*** IGES DATA FILE ANALYSIS ***
***      MARCH 1992      ***
***   IGES Data Analysis   ***
***   (708) 449-3430      ***
```

Input file is /mnt/Set093/D002/D002Q004\_IGS

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is April 22, 1993 11:23 AM

#### \*\*\* File and Product Name Information \*\*\*

```
File name from sender      = 'Q004.iges'
File creation Date.Time    = '930414.144200'
Model change Date.Time     = ''
Author                     = 'tom'
Department                  = 'GRAPHICS'
Product name from sender   = 'Q004.iges'
Destination product name   = 'Q004.iges'
```

#### \*\*\* Parameter Delimiters \*\*\*

```
Delimiter = ','
Terminator = ';'

```

#### \*\*\* Originating System Data \*\*\*

```
System ID          = 'ITDS CONVERTER: GEF_IGES'
Preprocessor version = '1.0'
Specification version = 6 (IGES 4.0)
```

#### \*\*\* Precision levels \*\*\*

```
Integer bits = 32
Floating point - Exponent = 38 Mantissa = 6
Double precision - Exponent = 308 Mantissa = 15
```

#### \*\*\* Global Model Data \*\*\*

Model scale = 1.0000E+00  
Unit flag = 1  
Units = 'IN'  
Line weights = 4  
Maximum line thickness = 1.536842E-02  
Minimum line thickness = 3.842105E-03  
Granularity = 1.000000E-03  
Maximum coordinate = 2.954101E+00

Drafting standard applicable to original data is not specified.

\*\*\* Status Flag Summary \*\*\*

|               |                            |    |
|---------------|----------------------------|----|
| Blank status: | Visible                    | 41 |
|               | Blanked                    | 0  |
| Independence: | Independent                | 39 |
|               | Physically Subordinate     | 0  |
|               | Logically Subordinate      | 2  |
|               | Totally Subordinate        | 0  |
| Entity use:   | Geometry                   | 39 |
|               | Annotation                 | 2  |
|               | Definition                 | 0  |
|               | Other                      | 0  |
|               | Logical/Positional         | 0  |
|               | 2D parametric              | 0  |
|               | Not Specified              | 0  |
| Hierarchy:    | Structure DE applies       | 0  |
|               | Subordinate DE applies     | 41 |
|               | Hierarchy property applies | 0  |
|               | Not Specified              | 0  |

\*\*\* Entity Occurrence Counts \*\*\*

| Entity | Form | Level | Count | Type   |
|--------|------|-------|-------|--|
| -----  | ---- | ----- | ----- | -----  |
| 106    | 11   | 0     | 24    | Copious data - Piecewise planar, linear string (2D path) |
| 106    | 63   | 0     | 8     | Simple closed planar curve                               |
| 110    | 0    | 0     | 6     | Line   |
| 404    | 0    | 0     | 1     | Drawing  |
| 406    | 16   | 0     | 1     | Property - Drawing size                                  |
| 410    | 0    | 0     | 1     | View - Orthographic parallel                             |

\*\*\* Entity Count by Level \*\*\*

| Level | Count |
|-------|-------|
| 0     | 41    |

\*\*\* Labeling Information \*\*\*

0% of the entities are labeled.

|           |    |
|-----------|----|
| Unlabeled | 41 |
|-----------|----|

\*\*\* Line Fonts Used in Data \*\*\*

| 100 | 102 | 104 | 106 | 108 | 110 | 112 | 114 |              |
|-----|-----|-----|-----|-----|-----|-----|-----|--------------|
| -   | -   | -   | -   | -   | -   | -   | -   | Undefined    |
| -   | -   | -   | 32  | -   | 6   | -   | -   | Solid        |
| -   | -   | -   | -   | -   | -   | -   | -   | Dashed       |
| -   | -   | -   | -   | -   | -   | -   | -   | Phantom      |
| -   | -   | -   | -   | -   | -   | -   | -   | Center-line  |
| -   | -   | -   | -   | -   | -   | -   | -   | Dotted       |
| -   | -   | -   | -   | -   | -   | -   | -   | User defined |

<<<<< PART OF LOG REMOVED HERE >>>>>

\*\*\* Line Widths Used in Data \*\*\*

| Weight    | Count | Width    |
|-----------|-------|----------|
| Defaulted | 3     | (0.0038) |
| 3         | 10    | (0.0115) |
| 1         | 28    | (0.0038) |

\*\*\* Colors Used in Data \*\*\*

|           |    |
|-----------|----|
| Defaulted | 3  |
| Red       | 8  |
| Green     | 30 |

\*\*\*\*\*  
\*\*\*\*\* ENTITY ANALYSIS \*\*\*\*\*  
\*\*\*\*\*

\*\*\* Entity type: 106

\*\*\* Entity type: 110

---

-- 6 lines averaging 1.362447E-01 units --

\*\*\* Entity type: 404

Drawing at D 5 contains 1 views.

Drawing at D 5 contains 0 annotation entities.

\*\*\* Entity type: 406

\*\*\* Entity type: 410

Scale of view at D 1 is 1.000000E+00.

Orthographic View entity at D 1 has 0 clipping planes specified.

XMIN = Not Set XMAX = Not Set

YMIN = Not Set YMAX = Not Set

ZMIN = Not Set ZMAX = Not Set

\*\*\* Message Summary \*\*\*

\*\*\* Error Summary \*\*\*

0 fatal errors

0 severe errors

0 errors

0 warnings

0 cautions

0 nitpicks

0 notes

\*\*\* End of Analysis of /mnt/Set093/D002/D002Q004\_IGS \*\*\*

## 10.1.2 Parser Log - AutoCAD R12

Title: IGESIN Journal (v5.1 Nov 05 1992)

File: I:/9341/Q204.xli

Date: Thu, Apr 22, 1993

Time: 10:44:27

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N: 117-10075750

Translating from IGES file: I:/9341/Q204.IGS

---

to AutoCAD Drawing: I:\9341\Q204.dwg

=====

Options obtained from: default settings

Curves Approximated to Tolerance of 0.01

Surfaces Approximated to Tolerance of 0.01

Text Font/Style mapping:

| IGES Text font | Style Name | ACAD Font |
|----------------|------------|-----------|
| 0              | SYMBOL0    | iges0     |
| 1              | STANDARD   | txt       |
| 2              | LEROY      | txt       |
| 3              | FUTURA     | txt       |
| 6              | COMP80     | txt       |
| 12             | GOTHICE    | gothice   |
| 13             | GOTHICI    | gothici   |
| 14             | ROMANS     | romans    |
| 17             | ROMANT     | romant    |
| 18             | ROMAND     | romand    |
| 19             | OCR        | txt       |
| 1001           | SYMBOL1    | iges1001  |
| 1002           | SYMBOL2    | iges1002  |
| 1003           | SYMBOL3    | iges1003  |
| 2001           | KANJI      | bigfont   |

IGES Linefont/AutoCAD Linetype mapping

| IGES Line Font | AutoCAD linetype | Shape file |
|----------------|------------------|------------|
| 0              | BYLAYER          |            |
| 1              | CONTINUOUS       |            |
| 2              | DASHED           | acad.lin   |
| 3              | PHANTOM          | acad.lin   |
| 4              | CENTER           | acad.lin   |
| 5              | DOT              | acad.lin   |

=====

Parse phase

=====

Start Section:

CONFORMANCE:

MIL-D-28000 Amendment1, 20 December 1988

Technical Illustration Class I Subset

ILLUSTRATION IDENTIFIER:

---

Q004.iges

Global Section:

Parameter Delimiter: ,  
 Record Delimiter: ;  
 Sending Product ID: Q004.iges  
 File Name: Q004.iges  
 System ID: ITDS CONVERTER: GEF\_IGES  
 Preprocessor Version: 1.0  
 Size of Integer: 32  
 Sgl. Precision Mag: 38  
 Sgl. Precision Sig: 6  
 Dbl. Precision Mag: 308  
 Dbl. Precision Sig: 15  
 Receiving Product ID: Q004.iges  
 Model Space Scale: 1.000000  
 Unit Flag: 1  
 Unit String: IN  
 # of Line Weights: 4  
 Maximum Line Width: 0.015368  
 Creation Date: 04/14/93 14:42:00  
 Minimum Resolution: 0.001000  
 Maximum Coordinate: 2.954101  
 Author: tom  
 Organization: GRAPHICS  
 IGES Version Number: 6  
 Drafting Standard: 0

Entity Summary:

| Type  | Form | Description                   | Count |
|-------|------|-------------------------------|-------|
| 106   | 11   | Planar Piecewise Linear Curve | 24    |
| 106   | 63   | Simple Closed Planar Curve    | 8     |
| 110   | 0    | Line                          | 6     |
| 404   | 0    | Drawing (form 0)              | 1     |
| 406   | 16   | Property (Drawing Size)       | 1     |
| 410   | 0    | View                          | 1     |
| Total |      |                               | 41    |

=====

Translation phase

Drawing Entity (404 Form 0) at DE 5, with  
 name = ,



size = 3.579889, 3.842107,  
units = IN,  
was processed in the AutoCAD drawing file: I:\9341\Q204.dwg

\*\*\* Warning (ACAD\_NEW\_VIEW\_VOLUME\_GENERATED) \*\*\*

( DE: 1 TF: 410:0 )

A new view volume has been generated for the view with:

XMIN (-3.565349), XMAX (0.844311),  
YMIN (-1.296656), YMAX (3.362281),  
ZMIN (-0.500106), ZMAX (0.500106).

#### IGES Entity Summary

| Type   | Form | Description                   | Count | Processed | Errors |
|--------|------|-------------------------------|-------|-----------|--------|
| 106    | 11   | Planar Piecewise Linear Curve | 24    | 24        | 0      |
| 106    | 63   | Simple Closed Planar Curve    | 8     | 8         | 0      |
| 110    | 0    | Line                          | 6     | 6         | 0      |
| 404    | 0    | Drawing (form 0)              | 1     | 1         | 0      |
| 406    | 16   | Property (Drawing Size)       | 1     | 1         | 0      |
| 410    | 0    | View                          | 1     | 1         | 0      |
| Totals |      |                               | 41    | 41        | 0      |

#### AutoCAD Entity Summary

| Entity   | Created | Errors |
|----------|---------|--------|
| LINE     | 6       | 0      |
| POLYLINE | 32      | 0      |
| Totals   | 38      | 0      |

#### Error Summary:

The following message was issued 1 time(s)

A new view volume has been generated for the view with:

XMIN (%lf), XMAX (%lf),  
YMIN (%lf), YMAX (%lf),  
ZMIN (%lf), ZMAX (%lf).

Status: 0  
Warning: 1  
Error: 0  
Fatal: 0

AFCTN Test Report  
93-069

AFCTB Test Report  
93-041

---

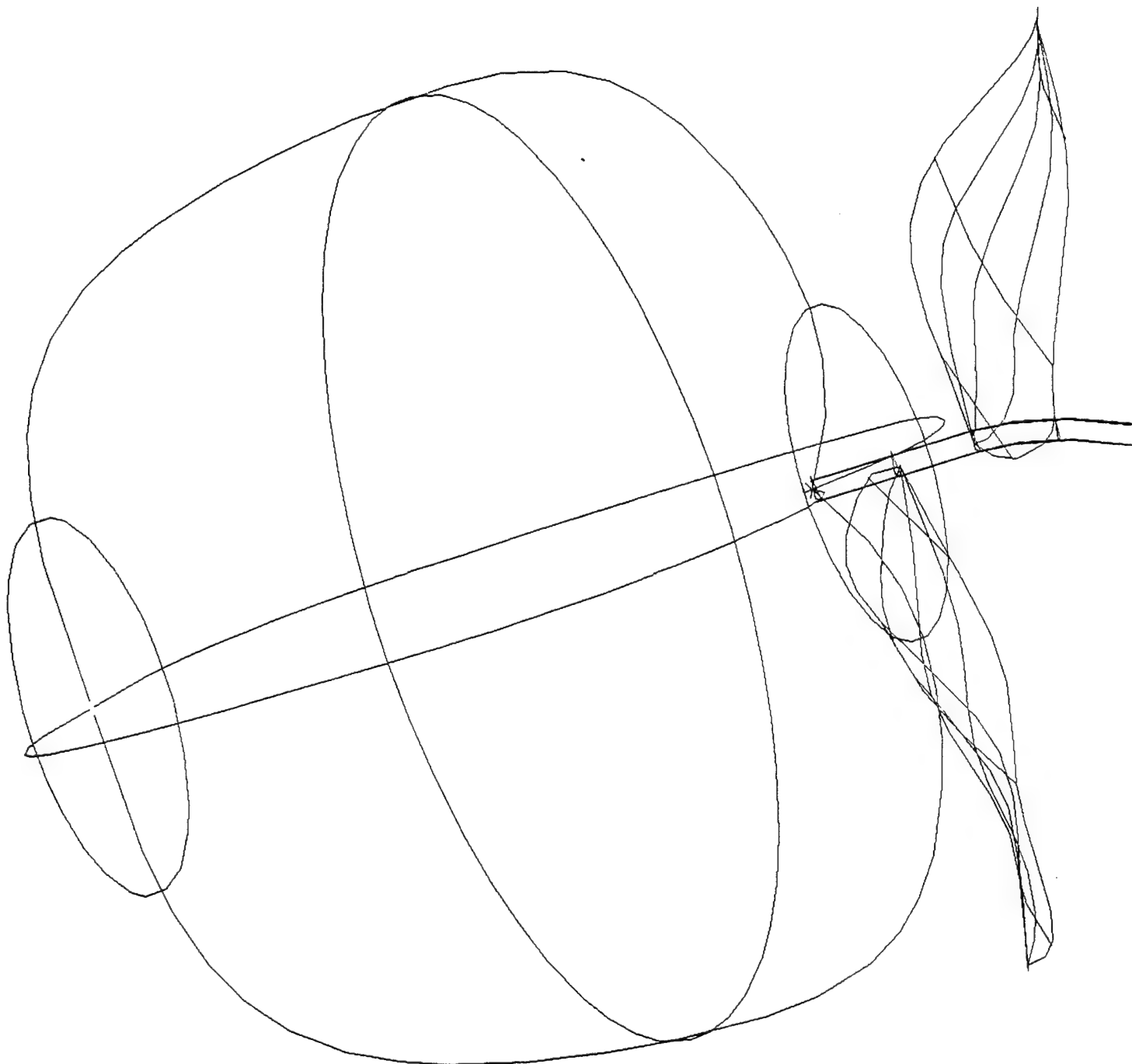
Elapsed Time:

Processor: 00:00:11

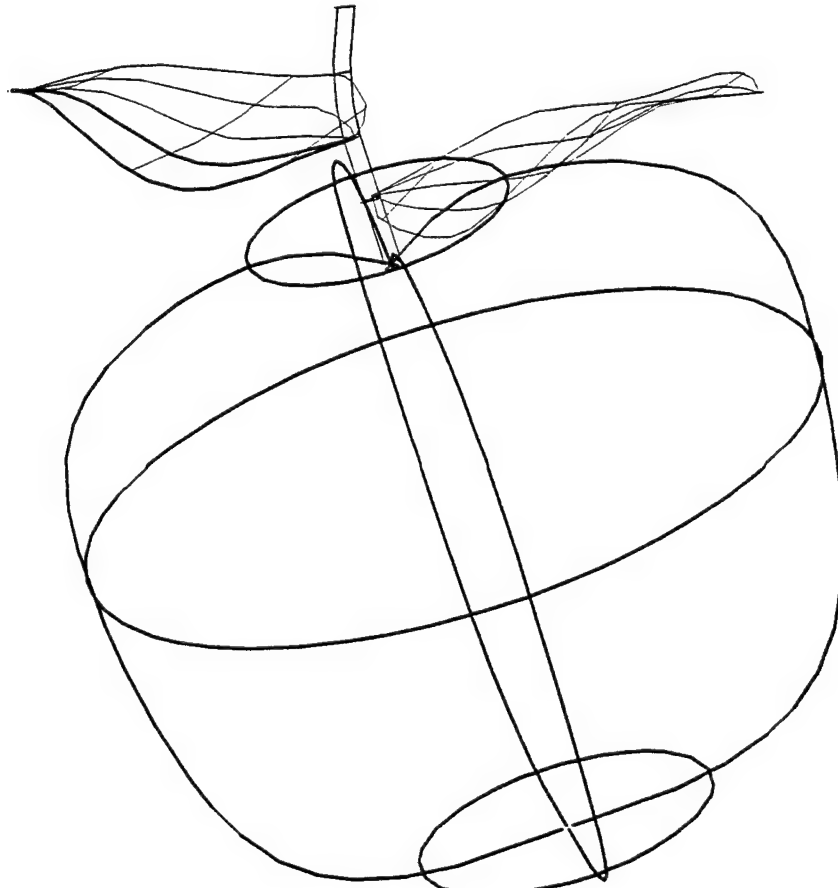
Clock: 00:00:12

---

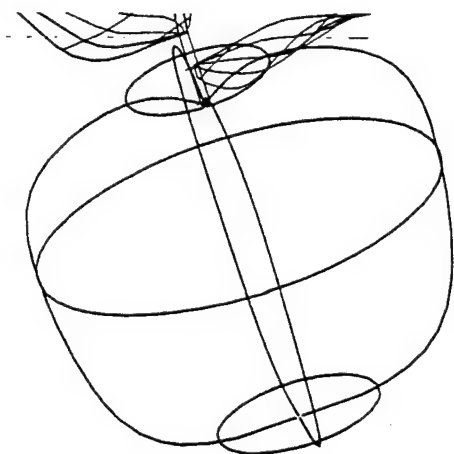
### 10.1.3 Output Cadkey v5.02



#### 10.1.4 Output IGESView



### 10.1.5 Output iges2draw/IslandDraw



---

## 11. Appendix C - Detailed SGML Analysis

### 11.1 Datalogics Parser Log

```
SGML Document Type Definition Parser
Version 3.36
Copyright (c) Datalogics 1988, 1989, 1990, 1991
An SGML System Conforming to
International Standard ISO 8879
Standard Generalized Markup Language

Log file: '9341-1.LOG'
SDO File: 'north.sdo'
Namecase General is yes.
Namecase Entity is no.
Parsing DTD file: '9341-1.dtd'

<!ATTLIST      viewport
              name          ID          #IMPLIED
              viewstyleid

FSIDREF DTD0137: Incorrect token 'FSIDREF'.
Parser Ignoring Input Up To Next MDO.
  In declaration: '<!ATTLIST'.
  In declaration: '<!DOCTYPE'.
  in line 33 in file '9341-1.dtd'

DTD does not conform to ISO 8879 standard due to these errors:
  Uncorrectable syntax error count: 1
  .DTO file not created due to parsing errors.

Program status code: 5.
```

### 11.2 Exoterica XGMLNormalizer Parser

```
C:\XGML\XGMLNORM.EXE --
Error on line 3 in file i:\9341\d001t001:
Unknown element name in start tag.
There is no such element as 'A82AA'.
The current element is 'A82A'.
End tags for the following elements are allowed: 'A82A', 'FRONT'.
Start tags for the following elements are allowed: 'A11', 'A12', 'A21',
'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',
```

'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.

Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --

Error on line 3 in file i:\9341\d001t001:

Unknown element name in start tag.

There is no such element as 'A82BB'.

The current element is 'A82B'.

End tags for the following elements are allowed: 'A82B', 'FRONT'.

Start tags for the following elements are allowed: 'A11', 'A12', 'A21',

'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.

Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --

Error on line 3 in file i:\9341\d001t001:

Unknown element name in start tag.

There is no such element as 'A91A'.

The current element is 'A91'.

End tags for the following elements are allowed: 'A91', 'FRONT'.

Start tags for the following elements are allowed: 'A11', 'A12', 'A21',

'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.

Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --

Error on line 3 in file i:\9341\d001t001:

---

Unknown element name in start tag.  
There is no such element as 'A'.  
The current element is 'AA1'.  
End tags for the following elements are allowed: 'AA1', 'FRONT'.  
Start tags for the following elements are allowed: 'A11', 'A12', 'A21',  
'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.  
Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

C:\XGML\XGMLNORM.EXE --  
Error on line 4 in file i:\9341\d001t001:  
Unknown element name in start tag.  
There is no such element as 'AB1A'.  
The current element is 'AB1'.  
End tags for the following elements are allowed: 'AB1', 'FRONT'.  
Start tags for the following elements are allowed: 'A11', 'A12', 'A21',  
'A22', 'A23', 'A24', 'A25', 'A26', 'A27', 'A28', 'A31', 'A32', 'A33',  
'A34', 'A35', 'A41', 'A42', 'A43', 'A44', 'A45', 'A51', 'A52', 'A53',  
'A54', 'A55', 'A61', 'A71', 'A72', 'A73', 'A81', 'A82', 'A82A', 'A82B',  
'A83', 'A84', 'A91', 'A92', 'A93', 'A94', 'A95', 'A96', 'A97', 'A98',  
'A99', 'AA1', 'AA2', 'AA3', 'AA4', 'AA5', 'AA6', 'AA7', 'AA8', 'AA9',  
'AAA', 'AAB', 'AB1', 'AB2', 'AB3', 'AB4', 'AB5', 'AB6', 'AC1', 'AC2',  
'AC3', 'AC4', 'AC5', 'AC6', 'AC7', 'AC8', 'AC9', 'AD1', 'AD2', 'AD3',  
'AE1', 'AF1', 'AF2', 'AF3', 'BODY'.  
Start tags for the following inclusions are allowed: 'VIEWDEF'.  
Text is allowed.

## 11.3 Exoterica Validator log

```
<!-- **Error** in "9341.sgm", line 1:
  The minimum literal following the SGML keyword in the SGML Declaration must
  be "ISO 8879:1986".
  The minimum literal is "ISO 8879-1986".
  <!SGML "ISO 8879-1986"
    /\
-->
<!-- Entity has no name, system id or public id in formal file -->.
<!-- **Error** in "9341.sgm", line 110:
```

---



```
viewstyleid      FSIDREF #IMPLIED
                00000000
```

```
<!-- 4 errors reported. -->
```

## 12. Appendix D - Detailed Raster Analysis

### 12.1 File D002R003

#### 12.1.1 Output HiJaak for Windows

| U.S. ARMY MATERIEL COMMAND                      |                            |                              |             |          |    |           |     |       |    |
|---|----------------------------|------------------------------|-------------|----------|----|-----------|-----|-------|----|
| REDSTONE ARSENAL, ALABAMA                       |                            |                              |             |          |    |           |     |       |    |
| PARTS LIST                                      |                            |                              |             |          |    |           |     |       |    |
| PL 10677287                                     |                            |                              |             |          |    |           |     |       |    |
| CODE IDENTIFICATION NO. 18876                   |                            |                              |             |          |    |           |     |       |    |
| TITLE OSCILLATOR, VOLTAGE CONTROLLED-COHO-A2A13 |                            |                              |             |          |    |           |     |       |    |
| FIG NO.   | PART OR IDENTIFICATION NO. | DRAWING OR SPECIFICATION NO. | DESCRIPTION | QUANTITY | PL | DATE      | REV | SHEET | OF |
| 1   | 10181751-207               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 2   | 10181751-208               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 3   | 10181751-209               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 4   | 10181751-210               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 5   | 10181751-211               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 6   | 10181751-212               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 7   | 10181751-213               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 8   | 10181751-214               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 9   | 10181751-215               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 10  | 10181752-261               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 11  | 10181752-357               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 12  | 10181751-147               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 13  | 10180306-239               | 10180306                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 14  | 10181751-133               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 15  | 10181751-166               | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 16  | 10180328-418               | 10180328                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 17  | 10181752-283               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 18  | 10181752-298               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 19  | 10181752-306               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 20  | 10181752-297               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 21  | 10181752-289               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 22  | 10181752-271               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 23  | 10181752-310               | 10181752                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 24  | 10181751-55                | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 25  | 10181751-1                 | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 26  | 10181751-2                 | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 27  | 10181751-3                 | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 28  | 10181751-4                 | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 29  | 10181751-5                 | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |
| 30  | 10181751-6                 | 10181751                     | RESISTOR    | 1        | 1  | 16 NOV 70 |     | 1     | 30 |

## 12.1.2 Output g42tiff/IslandPaint

| U.S. ARMY MATERIEL COMMAND<br>U.S. ARMY MISSILE COMMAND<br>REDSTONE ARSENAL, ALABAMA |                            |                              |              | PARTS<br>LIST  |                | PL 10677267<br>CODE IDENTIFICATION NO.<br>18876 |             |    |      |                  |
|--|----------------------------|------------------------------|--------------|----------------|----------------|---|-------------|----|------|------------------|
| TITLE OSCILLATOR-VOLTAGE CONTROLLED-COMO-A3A13                                       |                            |                              |              | USAMHCOM 63343 | DATE 16 NOV 70 | REV -   | SHEET 3 OF  |    |      |                  |
| FIG. NO.   | PART OR IDENTIFICATION NO. | DRAWING OR SPECIFICATION NO. | NOMENCLATURE | QUANTITY       | PL             | MI  | EFFECTIVITY |    |      | NOTES OR REMARKS |
|  |                            |                              |              |                |                |   | FROM        | TO | ZONE |                  |
|  | 10181751-207               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-208               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-209               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-210               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-211               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-212               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-213               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-214               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-215               | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
| 2  | 10181752-261               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 3  | 10181752-357               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 4  | 10181751-147               | 10181751                     | RESISTOR     | 2              |                |   |             |    |      |                  |
| 5  | 10180306-239               | 10180306                     | RESISTOR     | 2              |                |   |             |    |      |                  |
| 6  | 10181751-133               | 10181751                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 7  | 10181751-166               | 10181751                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 8  | 10180328-418               | 10180328                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 9  | 10181752-285               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 10   | 10181752-298               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 11   | 10181752-306               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 12   | 10181752-297               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 13   | 10181752-289               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 14   | 10181752-271               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 15   | 10181752-310               | 10181752                     | RESISTOR     | 1              |                |   |             |    |      |                  |
| 16   | 10181751-55                | 10181751                     | RESISTOR     | 1              |                |   |             |    |      |                  |
|  | 10181751-1                 | 10181751                     | RESISTOR     |                |                |   |             |    |      | 1                |
|  | 10181751-2                 | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-3                 | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-4                 | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-5                 | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |
|  | 10181751-6                 | 10181751                     | RESISTOR     |                |                |   |             |    |      |                  |

## 12.1.3 Output IGESView

| U.S. ARMY MATERIEL COMMAND<br>U.S. ARMY MISSILE COMMAND<br>REDSTONE ARSENAL, ALABAMA |                               |                                 |              | PARTS<br>LIST   |       | PL 10677287<br>CODE IDENTIFICATION NO.<br>18876 |                        |
|--|-------------------------------|---------------------------------|--------------|-----------------|-------|---|------------------------|
| TITLE OSCILLATOR VOLTAGE CONTROLLED-COMO-ASA13                                       |                               |                                 |              | USAMC/COM<br>EQ | 63343 | DATE 16 NOV 70                                  | REV -                  |
|  |                               |                                 |              | SHEET 3 OF      |       |   |                        |
| PART NO.   | PART OR<br>IDENTIFICATION NO. | DRAWING OR<br>SPECIFICATION NO. | NOMENCLATURE | QUANTITY        | PL    | WI  | EFFECTIVITY<br>FROM TO |
|  | 10181751-207                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-208                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-209                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-210                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-211                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-212                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-213                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-214                  | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-215                  | 10181751                        | RESISTOR     |                 |       |   |                        |
| 2  | 10181752-261                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 3  | 10181752-357                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 4  | 10181751-147                  | 10181751                        | RESISTOR     | 2               |       |   |                        |
| 5  | 10180306-239                  | 10180306                        | RESISTOR     | 2               |       |   |                        |
| 6  | 10181751-133                  | 10181751                        | RESISTOR     | 1               |       |   |                        |
| 7  | 10181751-166                  | 10181751                        | RESISTOR     | 1               |       |   |                        |
| 8  | 10180328-418                  | 10180328                        | RESISTOR     | 1               |       |   |                        |
| 9  | 10181752-263                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 10   | 10181752-298                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 11   | 10181752-306                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 12   | 10181752-297                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 13   | 10181752-289                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 14   | 10181752-271                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 15   | 10181752-310                  | 10181752                        | RESISTOR     | 1               |       |   |                        |
| 16   | 10181751-55                   | 10181751                        | RESISTOR     | 1               |       |   |                        |
|  | 10181751-1                    | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-2                    | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-3                    | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-4                    | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-5                    | 10181751                        | RESISTOR     |                 |       |   |                        |
|  | 10181751-6                    | 10181751                        | RESISTOR     |                 |       |   |                        |

---

## 13. Appendix E - Detailed CGM Analysis

### 13.1 File D002C002

#### 13.1.1 Parser Log MetaCheck

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 04/22/93 Time: 11:13:35 .

Metafile Examined : i:\9341\c202.cgm

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

===== Trace Report =====

Tracing not selected.

===== CGM Conformance Violation Report =====

No Errors Detected

===== CALS CGM Profile (MIL-D-28003) Report =====

No profile discrepancies detected.

===== Conformance Summary Report =====

MetaCheck Version 2.05 -- CGM/MIL-D-28003 Conformance Analyzer  
Copyright 1988-91 CGM Technology Software  
Execution Date: 04/22/93 Time: 11:13:37

Name of CGM under test: i:\9341\c202.cgm

Encoding : Binary

Pictures Examined : All

Elements Examined : All

Bytes Examined : All

BEGIN METAFILE string : "C002.cgm"

METAFILE DESCRIPTION : "NORTHROP B2 ITDS GEF, MIL-D-28003/BASIC-1"

---

Picture 1 starts at octet offset 200; string contains: "Picture 1"

Conformance Summary : This file conforms to the CGM specification.  
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested  
272 Elements Tested  
3978 Octets Tested

```
=====
|   No Errors Were Detected   |
=====
```

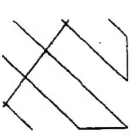
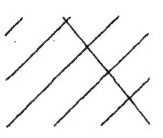

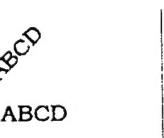
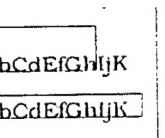
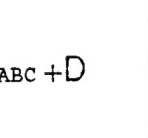

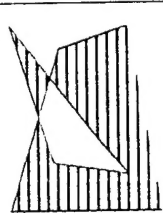

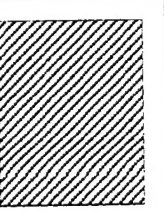
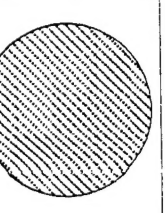

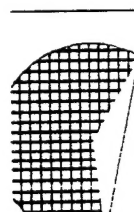
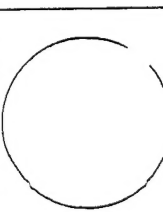

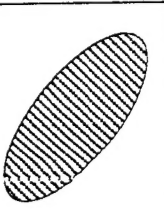
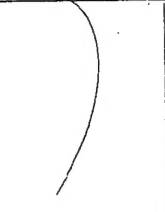

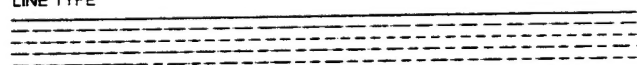
===== End of Conformance Report =====

### 13.1.2 validcgm Log

Analysis for file c202.cgm using table table  
ERROR: illegal in this state (2), std B  
ERROR: required precursor (0, 4) not yet seen  
(14.1, 0) (3, 6, 2) Clip Indicator OFF  
MILSPEC 28003 error: illegal hatch index  
(173, 2352) (5, 24, 2) Hatch Index 6  
(0, 1) occurred 1 time  
(0, 2) occurred 1 time  
(0, 3) occurred 1 time  
(0, 4) occurred 1 time  
(0, 5) occurred 1 time  
(1, 1) occurred 1 time  
(1, 2) occurred 1 time  
(1, 3) occurred 1 time  
(1, 4) occurred 1 time  
(1, 5) occurred 1 time  
(1, 6) occurred 1 time  
(1, 7) occurred 1 time  
(1, 8) occurred 1 time  
(1, 9) occurred 1 time  
(1, 10) occurred 1 time  
(1, 11) occurred 1 time  
(1, 12) occurred 1 time  
(1, 13) occurred 1 time  
(2, 2) occurred 1 time  
(2, 6) occurred 1 time

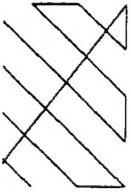
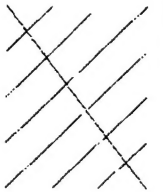
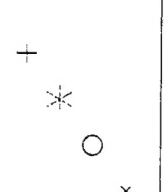
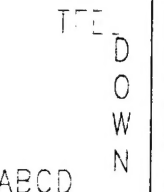
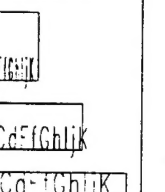
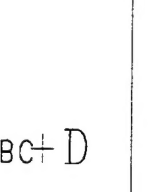

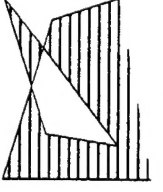
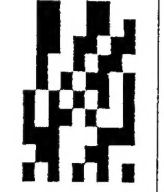
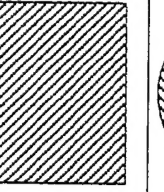
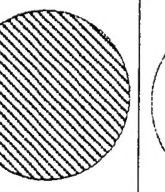
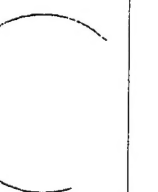
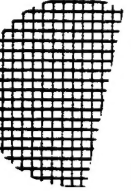

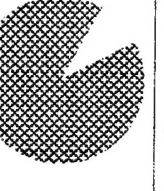
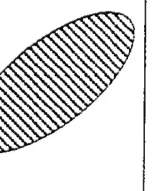

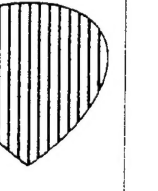
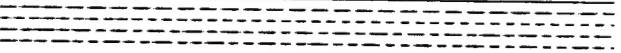
(2, 7) occurred 1 time  
(3, 2) occurred 1 time  
(3, 6) occurred 1 time  
(3, 6) occurred illegally 1 time  
(4, 1) occurred 32 times  
(4, 3) occurred 5 times  
(4, 4) occurred 50 times  
(4, 7) occurred 3 times  
(4, 9) occurred 1 time  
(4, 12) occurred 2 times  
(4, 15) occurred 3 times  
(4, 16) occurred 2 times  
(4, 17) occurred 2 times  
(4, 18) occurred 2 times  
(4, 19) occurred 1 time  
(5, 2) occurred 17 times  
(5, 3) occurred 17 times  
(5, 4) occurred 17 times  
(5, 6) occurred 5 times  
(5, 7) occurred 5 times  
(5, 8) occurred 5 times  
(5, 10) occurred 3 times  
(5, 12) occurred 5 times  
(5, 13) occurred 1 time  
(5, 14) occurred 7 times  
(5, 15) occurred 5 times  
(5, 16) occurred 7 times  
(5, 17) occurred 4 times  
(5, 18) occurred 1 time  
(5, 22) occurred 10 times  
(5, 23) occurred 8 times  
(5, 24) occurred 7 times  
(5, 27) occurred 2 times  
(5, 28) occurred 2 times  
(5, 29) occurred 2 times  
(5, 30) occurred 10 times  
(5, 31) occurred 7 times  
(5, 34) occurred 1 time

### 13.1.3 Output IslandDraw

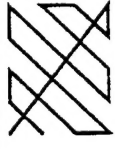

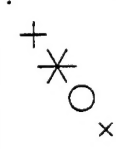

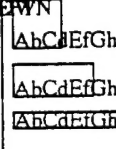
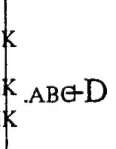

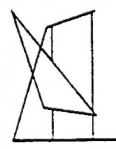




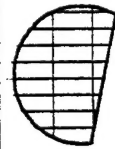


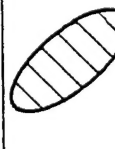


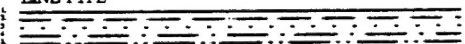
|   |   |   |   |  |  |
|---|---|---|---|--|--|
|                 |    |    |    |           |    |
| OLYLINE   | (2) DISJOINT<br>POLYLINE  | (3) POLYMARKER  | (4) TEXT  | (5) RESTRICTED<br>TEXT   | (6) APPEND<br>TEXT   |
|                 |    |    |    |           |    |
| OLYGON  | (8) POLYGON<br>SET  | (9) CELL<br>ARRAY   | (11) RECTANGLE  | (12) CIRCLE  | (13) CIRCULAR<br>ARC 3 POINT   |
|               |  |  |  |         |  |
| CIRCULAR<br>RC 3 POINT<br>LOSE  | (15) CIRCULAR<br>ARC CENTRE   | (16) CIRCULAR<br>ARC CENTRE<br>CLOSE  | (17) ELLIPSE  | (18) ELLIPTICAL<br>ARC   | (19) ELLIPTICAL<br>ARC CLOSE   |
| LINE TYPE<br> |   |   |   | CALS TEST NETWORK<br>MIL-D-28003<br>Computer Graphics Metafile<br>File: CTN-01Pd, 91-10-03 |  |



### 13.1.4 Output cgm2draw/IslandDraw

|   |   |   |   |  |   |
|---|---|---|---|--|---|
|                 |    |    |    |           |    |
| POLYLINE  | (2) DISJOINT<br>POLYLINE  | (3) POLYMARKER  | (4) TEXT  | (5) RESTRICTED<br>TEXT   | (6) APPEND<br>TEXT  |
|                 |    |    |    |           |    |
| POLYGON   | (8) POLYGON<br>SET  | (9) CELL<br>ARRAY   | (11) RECTANGLE  | (12) CIRCLE  | (13) CIRCULAR<br>ARC 3 POINT  |
|               |  |  |  |         |  |
| (14) CIRCULAR<br>ARC 3 POINT<br>CLOSE   | (15) CIRCULAR<br>ARC CENTRE   | (16) CIRCULAR<br>ARC CENTRE<br>CLOSE  | (17) ELLIPSE  | (18) ELLIPTICAL<br>ARC   | (19) ELLIPTICAL<br>ARC CLOSE  |
| LINE TYPE<br> |   |   |   | CALS TEST NETWORK<br>MIL-D-28003<br>Computer Graphics Metafile<br>File: CTN-01Rd, 91-10-03 |   |

### 13.1.5 Output for review

|   |   |   |  |   |   |
|---|---|---|--|---|---|
|               |  |  |         |  |  |
| (1) POLYLINE  | (2) DISJOINT POLYLINE   | (3) POLYMARKER  | (4) TEXT   | (5) RESTRICTED TEXT   | (6) APPEND TEXT   |
|               |  |  |         |  |  |
| (7) POLYGON   | (8) POLYGON SET   | (9) CELL ARRAY  | (11) RECTANGLE   | (12) CIRCLE   | (13) CIRCULAR ARC 3 POINT   |
|               |  |  |         |  |  |
| (14) CIRCULAR ARC 3 POINT CLOSE   | (15) CIRCULAR ARC CENTRE  | (16) CIRCULAR ARC CENTRE CLOSE  | (17) ELLIPSE   | (18) ELLIPTICAL ARC   | (19) ELLIPTICAL ARC CLOSE   |
| LINE TYPE<br> |   |   | CALS TEST NETWORK<br>MIL-D-28003<br>Computer Graphics Metafile<br>File: CTN-01Rd, 91-10-03 |   |   |